

Immunology and Allergy Abstracts

Oral Presentation

Odd Presentations of Chronic Granulomatous Disease

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Objectives: Chronic granulomatous disease (CGD) is an inherited, heterogeneous group of disorders of the NADPH oxidase complex in which phagocytes are defective in generating superoxide anion and its metabolites. These defects manifest primarily as a primary immunodeficiency resulting in bacterial infections produced by catalase-positive microorganisms and fungal diseases that occasionally may prove fatal. Invasive aspergillosis and other rarer mold diseases are the leading causes of mortality in CGD. A diagnosis of CGD should be pursued vigorously in all patients presenting with otherwise unexplained infections caused by *Aspergillus* spp, *Burkholderia cepacia*, and *Serratia marcescens*.

Methods and Subjects: Odd presentations in the clinical records of 12 patients diagnosed as CGD between 1997 and 2009 was reviewed.

Findings: 1) A 17 year old female who had been diagnosed as CGD at the age of 10 and had history of recurrent, frequent, severe infections since childhood, mycobacterial infection of lungs in two episode as a 5 and 14 year old child, large cervical suppurative lymphadenitis in one episode, invasive pulmonary aspergillosis at age of 15, was presented with respiratory distress, right upper quadrant pain and tenderness, abnormal liver function tests and Doppler ultrasonography hepatic veins, positive blood culture for fungus and diagnosed as Budd-Chiari syndrome due to Invasive aspergillosis. 2) Our CGD patients were susceptible to TB and BCG complications and more than two third of them got mycobacterial infections. 3) Antibacterial resistant cervical suppurative adenitis is a common presentation in our CGD patients as well.

Conclusion: Budd-Chiari syndrome is a congestive hepatopathy caused by blockage of hepatic veins. Hypercoagulable state could be identified in 75% of the patients. Only couple of cases with hepatic vascular thrombosis secondary to disseminated aspergillosis after liver transplantation and ... have been reported. Mycobacteria are not typical pathogens in CGD. Our observation suggests that oxidative burst is probably important in host defense against mycobacterial infections. A novel bacterium named *Granulobacter bethesdensis* that appears to

cause fever, weight loss, and necrotizing pyogranulomatous lymphadenitis in patients with CGD was reported in 2006, but it does not seem the etiologic factor for our patients Suppurative adenitis.

Key Words: Chronic granulomatous disease; CGD; Odd presentations

Oral Presentation

Approach to the Children with Recurrent Infections

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Recurrent and chronic infections in children are common reasons for physician visits and present a diagnostic challenge to pediatricians. Different risk factors and underlying disorders result in recurrent and chronic infections in children. During the first 3–5 years of life, children even with a normal immune system can experience four to eight upper respiratory tract infections per year. Day care attendance and exposure to tobacco smoke are common environmental risk factors which may increase number of respiratory infections up to 10 to 12 episodes per year in children. The majority of referred children with recurrent infections are normal. However, in evaluation of children with history of recurrent infections, it is important to consider atopy, anatomical and functional defects and underlying immunodeficiency. A pattern of recurrent or persistent infection is the major manifestation of primary immunodeficiency (PID). Although PID disorders were originally felt to be rare, it has become clear that they are much more common than originally appreciated. Therefore, in approach to children with recurrent and chronic infections, careful medical history, with more attention to warning signs and symptoms PID, physical examination and appropriate laboratory test should be performed. Primary immunodeficiency diseases (PIDs) render an affected individual susceptible to a variety of infectious diseases. Early diagnosis and adequate therapy are the keys for survival and a better quality of life of patients with PID, while delays in diagnosis and/or inadequate management may lead to permanent organ damaged. The overall frequency of PIDs has been estimated about 1:10,000 individuals. Up to date more than 150 PIDs have been phenotypically described, among them, there are over

100 primarily single-gene defects. Unfortunately, failure to recognize these conditions is still a major problem for clinicians around the world and diagnosis of patients with PIDs is associated with a considerable delay diagnosis. One major problem is that general practitioners, physicians and pediatricians lack familiarity with PIDs. This is particularly applicable in developing countries. To distinguish those children with underlying PID from those who are normal or having other underlying disorders, taking the careful medical history and physical examination should be performed and, if indicated, appropriate laboratory studies must be done. Laboratory investigation includes simple screening and advanced tests. Once the diagnosis of PID has been established, proper medical management should be instituted. Although bone marrow transplantation (BMT) is crucial treatment for patients with severe combined immunodeficiency (SCID) or significant T-cells defects, all these affected individual should receive intravenous immunoglobulin (IVIG) and Prophylactic antibiotics for *Pneumocystis jiroveci* (PCP) during period waiting for BMT. Children with B-cell immunodeficiencies are candidates for replacement therapy with intravenous immunoglobulin (IVIG). Live-attenuated vaccines like oral polio, varicella, and Bacillus of Calmette and Guérin (BCG) should not be given to patients or family members with suspected or diagnosed antibody or T-cell immune deficiency. If there is a need for blood transfusion, only irradiated, leukocyte-poor should be used in patients with T-cell defects to avoid graft vs-host disease. Gene therapy for immune deficiency disorders have been initiated in clinical trials. By the progress of clinical gene therapy trials, this therapy can be used successfully to treat monogenic PID. Hopefully, understanding the more molecular pathophysiology of PID will contribute to new therapeutic approaches in these group of patients.

Key Words: Children; Recurrent infections; Primary immunodeficiency diseases

Oral Presentation

Severe Congenital Neutropenia: Approach to a Patient with Neutropenia

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Severe congenital neutropenia (SCN) was one of first inherited immunodeficiency syndromes recognized. Classically, SCN is characterized by an extreme paucity of peripheral blood neutrophils and a characteristic myeloid maturation arrest in the bone marrow. Over the last 10 years, important

discoveries have highlighted the genetic heterogeneity of congenital neutropenia. Monoallelic mutations in ELA2, the gene encoding neutrophil elastase, account for the largest subgroup of patients with severe congenital neutropenia. Furthermore, mutations in the genes encoding the antiapoptotic factor HAX1, the transcriptional repressor GFI1, the cytoskeletal regulator WASP, and glucose-6-phosphatase-paralog G6PC3 have been associated with a clinical phenotype of severe congenital neutropenia. In addition, a number of diseases involving aberrant lysosomal trafficking, such as Griscelli disease, Chédiak-Higashi syndrome, Hermansky-Pudlak-syndrome type II, and P14-deficiency are associated with congenital neutropenia. One of the challenges of current lines of research is to define the pathophysiology of these genetic defects.

Key Words: Immunodeficiency; Congenital Neutropenia; Chédiak-Higashi syndrome

Oral Presentation

Primary Immunodeficiency Diseases Associated with Neutropenia

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Primary immunodeficiency diseases (PID) are inherited disorders that predispose individuals to recurrent infections, which are due to common or unusual microorganisms. Autoimmunity, malignancies and hematological disorders are other common manifestations of patients with PID. More than 150 different types of PID have already been reported, some are associated with neutropenia. These disorders consist of several inborn diseases ranging from isolated form of neutropenia such as severe congenital neutropenia and cyclic neutropenia to complex inherited disorders associating neutropenia. Chediak-Higashi syndrome, Griscelli syndrome type 2, Hermansky-Pudlak syndrome type 2, and p14 deficiency are a group of PID with neutropenia and oculocutaneous hypopigmentation, whereas exocrine pancreatic insufficiency in Shwachman-Diamond syndrome and warts in WHIM syndrome could be the prominent findings. CD40 ligand deficiency which is usually characterized by hypogammaglobulinemia and increased or normal IgM level could also present with neutropenia. Cartilage hair hypoplasia, glycogen storage disease Ib, Barth syndrome, dyskeratosis

congenital, reticular dysgenesis, and Cohen syndrome are some other diseases which could be associated with neutropenia.

Key Words: Infection; Mutation; Neutropenia; Primary immunodeficiency diseases

Oral Presentation

Analysis of Serotonin Receptor Gene (5-HT3RA) Expression on Human Peripheral Blood Lymphocytes (PBL) in Rheumatoid Arthritis by Real-time PCR

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Objective: Rheumatoid arthritis (RA) is traditionally considered a chronic, inflammatory, multisystem, autoimmune disorder that causes the immune system to attack the joints. Autoimmune diseases in general are complex genetic diseases where genes and environment interact in unknown ways. Epigenetic factors are too important in the beginning of the disease, as what has been seen in monozygotic twins that are usually discordant for the disease. It is suspected that certain changes in serotonergic system such as serotonin as a neurotransmitter and also receptor gene profiles can lead to RA. The 5-HT₃ receptor is a pentameric ligand-gated cation channel located in the central and peripheral nervous system and on extraneuronal locations like lymphocytes, monocytes and fetal tissue. The expression of the serotonin receptors is characterized in the brain but little work has been done to examine their expression in other tissues. Serotonin receptor gene expression alterations in different cells have not been reported in RA diseases. Nine different exons of 5-HT₃RA receptor genes have been recognized.

Methods and Subjects: In the present study, using RT-PCR technique, we investigated 5-HT₃RA receptor genes' expression in PBMC of forty healthy individuals compared to forty RA patients. The PBMC was separated from whole blood by Ficoll-hypaque and the total cellular RNA was extracted then cDNA was synthesized. We analyzed quantitatively gene expression profile by Realtime-PCR using primer pair specific for nine different exons of 5-HT₃RA receptor and β -actin as internal control. Each PCR product of exons of 5-HT₃RA receptor was confirmed by DNA sequencer ABI3700 capillary system (Applied Bio system, USA).

Findings: The results were shown that all types of 5-HT₃RA receptors in lymphocytes of normal individuals and RA are present. A significant difference in 5-HT₃RA exon, S3 and S4 expression profile in RA in comparison with healthy individuals were seen.

Conclusion: There is a quantitatively significant difference of 5-HT₃RA exons' receptor expression profile at RNA level following comparison to healthy individuals.

Key Words: Lymphocytes; Rheumatoid Arthritis; Real-time PCR; Serotonin; Receptor Gene (5-HT₃RA)

Oral Presentation

Samter's Triad in Iranian Patients

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Objectives: Aspirin and other non steroidal anti-inflammatory drugs which are cyclooxygenase-1 inhibitors results in non allergic reactions such as asthma and rhinitis. These hypersensitivity reaction has been known as samter's triad that consist of asthma, polyposis and aspirin intolerance. Education of patients and encourage them to full avoidance of these drugs is an important and key factor in treatment of patients.

Methods and Subjects: In this prospective study, we followed 16 patients with samter's triad for one year. 12 of 16 patients had only asthma together with polyposis and aspirin intolerance and 4 of 16 patients had both allergic rhinitis and asthma. After correct diagnosis of triad we encouraged patients to complete avoidance of aspirin and followed them for one year based on drug use and hospitalization rate.

Findings: 7 of 16 patients were male and other were females. Median age of our patients was 20 years old (10-45 years old). Nearly 30% of our patients had history of multiple polypectomy before diagnosis of aspirin sensitivity. Over half of our patients had history of multiple hospitalization. All of our patients had history of multiple drug use such as nasal and inhaler corticosteroid and antihistamin. The most symptom of our patients was nasal congestion followed by rhinorrhea. After correct diagnosis of their disease and avoidance of NSAID, the rate of hospitalization decreased significantly and also drug use.

Conclusion: If samter's triad was not recognized properly results in poor treatment and causes significant morbidity and occasionally mortality.

Patients should be encouraged to complete avoidance of aspirin and other NSAIDS.

Key Words: Asthma, Samter; Aspirin

Poster Presentation

Pet Exposure and the Symptoms of Asthma, Allergic Rhinitis and Eczema in 6-7 years old Children

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Objective: Allergic diseases are frequent in children and their prevalence and severity differ in the different regions of the world. The association between pet ownership in childhood and subsequent asthma and sensitization is very controversial. **Methods and Subjects:** The study has been fulfilled by analytic cross sectional method. In our survey conducted with standardized method (International Study of Asthma and Allergies in Childhood), 3200 children 6-7 years old were questioned regarding asthma, allergic rhinitis and eczema.

Findings: The prevalence of attacks and shortness of breath with wheezing during last 12 months in the children who had exposure to pets in the first year of life was 34.3%, which was less than children who didn't have exposure (OR=3.06, 95% confidence interval [CI] 1.14-8.21, P=0.021). Also the prevalence of past 12 months night dry coughs, allergic rhinitis symptoms and eczema symptoms in those who had pet exposure in the first year of their life was lower than the children which did not have it. However, there was no significant difference in some other symptoms of asthma in two groups.

Conclusion: Our findings suggest that pet exposure in the first year of life could have a protective effect on asthma, allergic rhinitis and eczema.

Key Words: Pet exposure; Allergic Rhinitis; Asthma; Eczema

Oral Presentation

Cow's Milk Allergy in Iranian Children

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Objectives: The most common period of food allergy is early childhood specially in infant. Cow's milk is the most important allergen in children

with history of food allergy. prevalence of cow's milk allergy is approximates 2.5% during the first 3 years of life. it may present as IgE-mediated, cell mediated or mixed type. double-blind, placebo-controlled food challenges are the gold standard for food allergy diagnosis, but the diagnosis of cow's milk allergy is based on skin prick test and RAST test. increasing levels of food-specific serum IgE antibodies or prick skin test mean wheal diameters correlate with increasing chance of clinical reactivity. patients with cow's milk allergy must avoid cow's milk and it's protein based products. most young children outgrow their food allergy within a few years, except in majority of patients with peanut and seafood allergy. Cow's milk allergy presenting in infancy has a good prognosis for outgrowing within 2-3 year of follow-up.

Methods and Subjects: We evaluate 30 patients with IgE-mediated cow's milk allergy. after history taking, we used skin prick test or RAST test to confirm our diagnosis. A CBC test was also done to assess eosinophilia in children.

Findings: There was 14 female and 16 male in our case. the mean age was 14 month (1-5 years old). There symptoms were: skin manifestation (79%), respiratory (58%), gastrointestinal (50%), total IgE elevated in 77% of patients. Blood eosinophilia was seen in 28%. Skin prick test was positive in 80% and RAST test was positive in 58% of patients. 70% of case had positive family history of allergy. 60% of our patients had both positive skin prick test and RAST test.

Conclusion: In our study cutaneous manifestation was the most symptoms followed by respiratory symptoms. We can use SPT to diagnosis of cow's milk allergy because of it's availability and simplicity.

Key Words: Cow milk; RAST; Allergy

Poster Presentation

Antibody Deficiency to Pneumococcal Capsular Polysaccharide Vaccination in Patients with Chronic Kidney Disease

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Objective: Patients with chronic kidney disease (CKD) or on dialysis have a greater risk of infections, which could be due to defective immune function. While there are controversial reports on efficacy of

vaccination in this group of patients, aim of this study was to evaluate the antibody response to pneumococcal capsular polysaccharide vaccine (PPV23) in CKD patients.

Methods and Subjects: Sixty-six patients with CKD and 40 healthy individuals were vaccinated with PPV23. Blood samples were taken before and 4 weeks after vaccination and specific antibodies against whole pneumococcal antigens were measured using Enzyme-Linked Immunosorbent Assay (ELISA) technique.

Findings: Among 66 vaccinated patients, 14 (21%) were hypo-responsive to vaccine (Group 1), while 52 had normal specific antibody response (Group 2). Post-vaccination titers in the Group 2 were significantly higher than the Group 1 ($P=0.012$ for IgG post-vaccination and $P=0.020$ for IgG2 post-vaccination). During follow-up of both patient groups, patients of the Group 1 developed more episodes of pneumococcal infections than those in patients of the group 2 ($P=0.007$)

Conclusion: Although the majority of patients with CKD are responder to the polysaccharide vaccine, a substantial proportion of patients are immunodeficient in response to PPV23 immunization and are remained at significant risk for pneumococcal infection. This vaccination policy should therefore be administered which could prevent infection in responder patients.

Key Words: Chronic kidney disease; Pneumococcal vaccination; Polysaccharide vaccine; Antibody response

Poster Presentation

Prevalence of Asthma in Children of the Elementary School of Khormabad

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Objective: Asthma is responsible for a significant proportion of school days lost and nationally in 5-7 lost school days/yr for each child. This study was done to assess the prevalence of asthma in elementary student of Khormabad (Iran) in 2004-2005.

Methods and Subjects: In this cross-sectional descriptive study, 1800 of elementary students (half of them were boys and the other half were girls) were considered. Simple random sampling was done with 12 choosier clusters from 2 areas of municipality. All of students were questioned. The results of this survey were analyzed with SPSS program.

Findings: Out of 1800 students 50.4% were boys and 49.6% were girls. 125 students had asthma. The prevalence of asthma was determined as 6.94% and 1.22% had exertion asthma. 58% of students had asthma in autumn, 23% in winter, 20.6% in spring,

13% in summer and in all season was 13%. 65% of students received out patient treatment, 30% admitted to hospitals and 5% received long term treatment. Positive history of asthma for their fathers was 45.7%, mothers 19.4% and 24.2% in their sisters and brothers.

Conclusion: The prevalence of asthma was estimated 6.94%.

Key Words: Prevalence; Asthma; Elementary students

Poster Presentation

Acute Incidental of Vesicular Skin Eruptions in Neonborns in Qazvin Province

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Objectives: Neonatal period is an important part of human lives. Skin is considered as the first defence mechanism and its health and disease takes more attention among parents and physicians. Vesicular skin eruptions, infectious or allergic, are the most discussing points in this era. The aim of this study was to assess the underlying cause, of acute attack of vesicular eruptions in a group of neonates sequentially admitted to qods children hospital - Qazvin, during a 6-month period.

Methods and Subjects: In this descriptive study, 25 neanates with a clinical history of vesicular skin diseases were assessed. We took a complete information about birth place, their skin contactants, and general conditions, We did also laboratory blood and skin cultures, and skin and peripheral smear neutrophil and eosinophil counts.

Findings: According to this study, fever and poor feeding was observed in only few patients (8% and 12%), and other accompanying sings like icter and diarrhae in 20% and 4%. The vesicles first appeared in lower extremities and diapper area at the age of 1-5 -day-old(60%), 6-10-days (28%) and 11-15-day-old(4%). CRP, the most important inflammatory marker in neonates was negative in alls. ESR revealed a mean value=3.2 mm/h (1-12). WBC and neutrophil count showed a mean value 11807 (5700-17600) and 41.92%, respectively. Mild Eosinophilia detected in 44%. Skin culture was positive in 91% of patients, 45% coagulase positive and 37.5% coagulase negative staphylococcus.

Conclusion: Both history and physical examination besides laboratory parameters determined there was no significant primary infections in this age group of

neonates and there must be a noninfectious base. Otherwise, positive skin culture results in spite of blood leukocytosis or any increase in acute inflammatory blood markers, indicates a bacterial colonization rather than established infection. Mild increase in eosinophil count could solve the problem by considering regular contact with irritant material as a base of irritant contact dermatitis.

Key Words: Neonatal eruptions; Contact dermatitis; Vesicular skin infections

Oral Presentation

Immunologic Aspects of Patients with Disseminated Bacille Calmette-Guerin Disease in North-West of Iran

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Objective: Adverse reactions induced by BCG vaccination are rare, disseminated mycobacterial BCG infection in particular, which is often fatal and results from impaired immunity. The aim of this study is to determine the nature of the immunodeficiencies in patients with disseminated BCG infection in northwest region of Iran.

Methods and Subjects: Through 2 years all infants with BCG adenitis or other complications of this vaccine that had suspicious BCG infection were referred to children's hospital and health centers of Tabriz. Evaluation of immune system and in some cases genetic survey was performed in infants with evidence of histopathologic demonstration of acid-fast bacilli. Then frequency of infants who had disseminated BCG infection with immunodeficiency was defined.

Findings: From 48 selected infants with complications of BCG vaccine in the range of 2 to 62 months, 28 infants (58.3%) were male and 20 infants (41.7%) were female. Disseminated BCG infection was diagnosed in 11 cases, almost all of whom had immunodeficiency as follows: 7 cases had severe combined immunodeficiency and one cases had chronic granulomatous disease. MSMD in two cases and IL12 R deficiency in another one was diagnosed. Overall, the mortality rate was 72.8 % (8 cases)

which 7 cases of them were SCID and another one CGD. Consanguineous was found in more than half (7 cases) of patients and family history of disseminated BCG infection or immunodeficiency was found in nearly one third (3 cases) of patients. Discussion: BCG vaccine is administered world wide to prevent tuberculosis and is considered to have excellent safety profile. However in some immunodeficient patients it can cause severe and fatal complications, like in our region, where all cases of disseminated BCG infection with severe immunodeficiency died.

Conclusion: BCG vaccination is necessary in some countries such as Iran, so it seems that development of a safer vaccine and change of vaccine program in the families with history of inherited immunodeficiency can be identifies such high risk infants and prophylaxis of severe complications or dead in such patients.

Key Words: Immunodeficiency disorders; SCID; Disseminated BCG infection

Poster Presentation

Evaluation of Common Cause of Chronic Cough in Children Attending to Children's Hospital

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Objective: Chronic cough, defined as a daily cough more than 4 weeks, is one of most common complaints of childhood and has different causes. The causes of chronic cough are rarely studied in the children of our region, on the other hands; the etiology of chronic cough in children is different from adults. The aim of this study is evaluation of different etiologies of chronic cough in children.

Methods and Subjects: In a descriptive, cross sectional study in a 6 month period, all children referred to allergy and ENT clinics with the chief complaint of chronic cough more than 4 weeks without recovery were evaluated. After accurate observation about type of cough, onset time of cough and exact physical examination, the most common signs and symptoms in this period were recorded and necessary evaluation based on probable diagnosis were made.

Findings: 108 children with the average age of 6.33±2.79 including 76 (70.4%) males and 32 (29.6%) females were studied. Productive cough and post nasal discharge were the most common clinical findings. Diffuse pulmonary hoarseness was the prevalent findings in pulmonary examinations. Maxillary sinusitis and pulmonary hyperinflation were the most common findings in x-ray. Sinusitis (55%) along with allergic disorders (44%), asthma

(31%) and foreign body aspiration (16%) were the most common causes of chronic cough. Pollens and mites were the most allergens in patients with allergic disorders. With recognition of underlying causes, recovery was observed through one to three months.

Conclusion: Considering the common causes of chronic cough can be helpful in prompt diagnosis and effective treatment of such patients. Also exact observation and physical examination can be useful in diagnosis. By accurate diagnosis, in the most of patients, recovery could be obtained through one month.

Key Words: Chronic cough; Children; Etiology

Poster Presentation

Bronchogenic Cyst in a Patient with Asthma

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Background: Difficult to treat asthma is asthma syndrome that brings in our mind other differentials, mediastinal masses are not common findings, but are important variables. Bronchogenic cyst is a congenital anomaly of the foregut that typically found in the mediastinum and diagnosed accidentally.

Case Presentation: We present a 4-year-old girl with allergic asthma that begun at 8-month-old and finally Bronchogenic cyst detected in this patient. The patient had history of asthma since eight months old. She had history of several asthma attacks with partly respond to asthma management in past history. Due to respiratory distress was hospitalized in Pediatric Intensive Care Unit. Imaging studies showed a 4×3 cm mass in the posterior of trachea. The patient underwent thoracotomy and surgical examination found a cyst which compressed the trachea. Pathological examination of removed cyst diagnosed Bronchogenic cyst.

Conclusion: Bronchogenic cyst is an uncommon developmental abnormality but in a patient with obstructive pattern of airways it should be considered.

KeyWords: Bronchogenic cyst; Asthma; Respiratory distress

Poster Presentation

Quality of Life in Asthmatic Children: Effect of Peak-Flowmeter Device

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Objective: Asthma is the most prevalent chronic disease during childhood and it is estimated that 4.8 million children involved in asthma whole over the world, its prevalence and incidence is increasing.

Methods and Subjects: In this study 80 children involved in asthma included. These patients had not any history of peak-flow metery, at all. At first, each patient attended the clinic with one of their parents (mother was preferred) and one questionnaire sample was filed for them. Then, Standard peak expiratory flow rate (PEFR), assumed for each patient upon their height by using reference book.

Findings: Mean age of patient involved in asthma was 8.48± 2.38 for the girls (41.3%) and 9.06± 2.98 for the boys. Mean duration of involving in asthma was 35.96±30.1 months for the girls and 47.65±34.08 for boys.

Conclusion: Mean total scores in both genders (33cases of girls and 47 cases of boys) were 49.26±8.65 before and 54.85±8.6 after using peak-flow meter device (P-value<0.0001). Thus, totally, it can be suggested that using peak flow meter device has resulted in increasing and also improving quality of life in them.

Key Words: Quality of life; Allergy; Children; Peak-flowmetry

Poster Presentation

Evaluation of Parent's Knowledge about Children's Asthma

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Objective: Asthma is a common chronic lung disease in children and is the most cause of missed school days in childhood and adolescent. There are considerable evidence on increased prevalence of asthma and atopic disease in the world. This Study aimed to determine increasing knowledge of parents

about children's asthma and avoidance mistake believe when attack of asthma is occur. We gain positive step in correct therapy of asthma and increase health's children.

Method and Subjects: This is a descriptive study based on ISAAC (international study of asthma and allergy) protocol from 100 people of parents questions on knowledge about asthma and Results were analyzed and entered into the checklist previously provided.

Findings: Although majority parents have educational level less than diploma, but take a correct knowledge about asthma in basis: Role of stress, Atopic, Inheritance, Atmospheric changes, Cigarette,

Air pollution, Air way obstruction and Contagious of asthma. Of Course parents have in correct knowledge such as: role of virus in asthma +equality asthma to wheezing, correlation asthma with common cold. Meanwhile most numerous parents don't recognize Spacer.

Conclusion: This study revealed that parents have incorrect knowledge from some field of asthma disease. The best and most educational device for parents is radio and television whereas minimum manner in training is offered by medical and health care.

Key Words: Asthma; Children; ISAAC